

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
The Proposed Extension of Part 4 of the)
Commission's Rules Regarding Outage Reporting to) PS Docket No. 11-82
Interconnected Voice Over Internet Protocol Service)
Providers and Broadband Internet Service Providers)

To: The Commission

T-MOBILE USA, INC. COMMENTS

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August 8, 2011

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COMMENTS

T-Mobile USA, Inc. ("T-Mobile") hereby responds to the Commission's *Notice of Proposed Rulemaking* in the above-referenced proceeding.¹ As discussed below, additional mandatory outage reporting requirements are unnecessary at this time.

INTRODUCTION AND SUMMARY

The Commission seeks comment on whether its Part 4 outage reporting requirements should be extended to interconnected Broadband Internet Access Service Providers, Broadband Internet Service Providers (collectively "Broadband Providers") and interconnected Voice over Internet Protocol ("VoIP") Providers.² Such action is premature and would impose significant burdens on the industry with little or no corresponding benefit.

First, competitive forces obviate the need for additional mandatory outage reports. There is no evidence that market forces are insufficient to ensure that Broadband and VoIP providers maintain secure, reliable, and resilient services and networks.

¹ *The Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, Notice of Proposed Rulemaking, __ FCC Rcd __ (2011) ("NPRM").

² NPRM at ¶¶ 11, 26, 31-32, 40-50.

Second, the proposed extension of the existing Part 4 outage reporting requirements to Broadband and VoIP providers is premature. Broadband technologies are vastly different from those for which the current outage reporting requirements were adopted. The Alliance for Telecommunications Industry Solutions' ("ATIS") Network Reliability Steering Committee ("NRSC") currently is evaluating whether mandatory outage reporting of the type proposed in the *NPRM* would be beneficial and, if so, what the appropriate reporting thresholds should be in the context of these networks. Reporting obligations should only be extended in the context of Commission collaboration with the NRSC's evaluation.

Third, the recent success of the voluntary Disaster Information Reporting System ("DIRS") demonstrates the value of collaboration and that mandatory reports are unnecessary. T-Mobile's experience is that the current, mandatory outage reporting requirements divert critical resources from restoration efforts. The existing Part 4 outage reporting requirements are burdensome and, pursuant to a recent Executive Order, should not be extended without concrete evidence that such requirements would provide a significant public benefit and that the FCC's goals could not be achieved through such collaborative efforts, rather than compulsory programs.

Fourth, outage reports should be filed only with regard to actual outages. The metrics proposed for triggering outage reports would require "performance" reports rather than outage reports. Moreover, the proposed metrics are unsupported and largely unworkable.

Finally, to the extent the Commission receives outage reporting data – whether submitted voluntarily or compulsorily – this data should be deemed confidential and protected from public disclosure.

DISCUSSION

I. ADDITIONAL, MANDATORY OUTAGE REPORTING REQUIREMENTS SHOULD NOT BE ADOPTED AT THIS TIME

A. Competitive Forces are Sufficient to Ensure that Networks are Resilient, Secure, and Reliable

Less than four months ago, the President's National Security Telecommunications Advisory Committee ("NSTAC") concluded that "market incentives will remain the fundamental driver of industry practices and standards [and] companies will continue to offer services that are as resilient and secure as customers' preferences dictate."³ Interconnected VoIP and Broadband Providers are subject to the same market incentives.

Moreover, market incentives have driven the evolution of networks from legacy circuit switched technology to more resilient IP networks that have built-in redundancy, self-healing capabilities, and error-checking functionality.⁴ There is no evidence that market forces are insufficient to ensure that interconnected VoIP and Broadband Providers' networks remain reliable, secure, and resilient.⁵ Absent such evidence, the Commission should not intervene and adopt mandatory outage reporting requirements.⁶ It is well established that such requirements

³ NSTAC, NSTAC REPORT TO THE PRESIDENT ON COMMUNICATIONS RESILIENCY 14 (2011) ("NSTAC Report") *available at* [http://www.ncs.gov/nstac/reports/NSTAC Report to the President on Communications Resiliency \(2011-04-19\)\(Final\)\(pdf\).pdf](http://www.ncs.gov/nstac/reports/NSTAC%20Report%20to%20the%20President%20on%20Communications%20Resiliency%20(2011-04-19)(Final)(pdf).pdf).

⁴ *See* ATIS Comments, ET Docket No. 04-35 at 1 (Aug. 2, 2010).

⁵ *See NPRM* at ¶ 20 & n.40 (citing commenters who previously opposed an extension of the Part 4 outage reporting requirements because market-based incentives were sufficient to "ensure the security, reliability, and resiliency of their networks and services"); *accord* T-Mobile Comments, PS Docket No. 11-60 at 15-17 (July 7, 2011).

⁶ ATIS Comments, ET Docket No. 04-35 at 3 (Aug. 2, 2010).

are extremely burdensome and divert resources that could be dedicated to outage recovery efforts.⁷

B. The Proposed Mandatory Outage Reporting Requirements are Unnecessary and Premature

The Commission premises its proposal to extend outage reporting requirements to interconnected VoIP service providers, Broadband Access Providers, and Broadband ISPs on the belief that, absent mandatory reporting requirements, outage information will not be shared throughout the industry to ensure network security, reliability, and resiliency.⁸ This premise is flawed.

First, the Commission correctly notes that initial attempts seven years ago at voluntary disclosure were less than optimal,⁹ but much more recent experience with DIRS indicates that carriers are more willing today to provide outage information voluntarily than they were nearly a decade ago. Although the Commission has underestimated the paperwork burden associated with this voluntary outage reporting system,¹⁰ it has enjoyed widespread carrier participation. Thus, before any mandatory outage reporting requirements are extended to new classes of service providers, the Commission should carefully consider implementing and evaluating a voluntary reporting system.

Second, the Commission is incorrect in its belief that “service providers are loathe to share detailed information about network outages for competitive reasons and this impacts the

⁷ See ATIS Comments, ET Docket No. 04-35 at 6 (Aug. 2, 2010).

⁸ *NPRM* at ¶ 20. *Accord* National Broadband Plan, Recommendation 16.6 (Mar. 2010) (noting that an expansion of the outage reporting requirements is necessary because “the lack of data limits our understanding of network operations and of how to prevent future outages”).

⁹ See *NPRM* at ¶ 57.

¹⁰ See note 19 *infra*.

overall health of the communications network.”¹¹ The NSRC, for example, is comprised of numerous service providers that routinely share information about network outages to foster the development of best practices. Participating members are willing to share sensitive outage information because members have signed non-disclosure agreements.¹² Based on this information, the NRSC is able to develop best practices independent of Commission involvement.

The high level of security, reliability, and resiliency of communications and information services networks is based on voluntary industry efforts, such as the work of the NRSC, rather than Commission mandates. Industry proactively evaluates network performance on a voluntary basis and develops standards designed to ensure network reliability and resiliency based on emerging threats and issues. The Commission should foster these voluntary efforts and the voluntary exchange of information through a strong, collaborative government-industry relationship rather than through mandatory outage reporting.¹³

Third, it would be premature to extend mandatory outage reporting as proposed in the *NPRM* until (i) industry standards bodies such as ATIS, through the NRSC, have fully evaluated the issue, (ii) best practices have been designed and implemented to address interconnected VoIP and Broadband Service outages, and (iii) sufficient time has elapsed to determine whether these best practices obviate the need for a mandatory reporting regime.¹⁴ Based on its work to date,

¹¹ *NPRM* at ¶ 21.

¹² See ATIS and NRSC Ex Parte, ET Docket No. 04-35 at 3 (Oct. 8, 2010) (“NRSC Ex Parte”).

¹³ *Id.* at 7. T-Mobile favorably notes the recently concluded work of the FCC’s chartered Communications Security, Reliability and Interoperability Council (“CSRIC 2”), where industry evaluated approximately 400 Best Practices related to cybersecurity.

¹⁴ This same approach should especially be followed before outage reporting obligations are imposed on additional, nascent services. See *NPRM* at ¶ 55.

the NRSC has concluded that the existing Part 4 outage rules should not be applied to interconnected VoIP or Broadband Providers at this time.¹⁵ T-Mobile agrees with this assessment.

If rules are adopted in response to the *NPRM* before the NRSC and other standards bodies have had a chance to fully evaluate outage reporting in the context of interconnected VoIP and Broadband Providers, the rules are unlikely to achieve their desired result. The Commission likely will not get accurate visibility into the reliability of these networks and services because, as discussed below, many of the metrics proposed in the *NPRM* are not necessarily indicative of outages.

C. The July 11, 2011 Executive Order Counsels Against Extension of the Part 4 Outage Reporting Requirements as Proposed

On July 11, 2011, President Obama issued an Executive Order instructing Independent Agencies to adopt new rules “only after consideration of their costs and benefits.”¹⁶ Thus, before the Commission can impose new outage reporting obligations, it must evaluate the cost of the regulation against the benefits that would be delivered by adoption of the obligations. There is ample evidence that outage reporting is a significant burden on covered providers.¹⁷ In contrast,

¹⁵ NRSC Ex Parte at 7; *accord* ATIS Comments, ET Docket No. 04-35 at 1 (Aug. 2, 2010).

¹⁶ Executive Order, § 1(a) (July 11, 2011) (“July 2011 Executive Order”). The July 2011 Executive Order also requires the FCC to consider how “to modify, streamline, expand, or repeal” existing regulations, such as the current outage reporting requirements, that may be excessively burdensome. *Id.* at §2(a).

¹⁷ *See, e.g.*, AT&T, Inc. Comments, ET Docket No. 04-35 at 4 (Aug. 2, 2010); ATIS Comments, ET Docket No. 04-35 at 7-8 n.5 (Aug. 2, 2010); ATIS Comments, PS Docket No. 10-270 at 1, 6 (Jan. 13, 2011).

there is no direct correlation between the proposed mandatory outage reports and a public benefit.¹⁸

Before transposing its legacy outage reporting regime onto new and rapidly evolving broadband services, the Commission should carefully consider that the existing Part 4 reporting requirements are much more burdensome than the Commission originally intended. For example:

- ATIS has stated: “The Commission had initially estimated that the total number of outage reports from all reporting sources combined would be substantially less than 1,000 annually. In reality, the total number of reports filed is substantially higher, with a single large carrier filing more than five times that number (or 5,000 outage reports in a single year). The Commission also estimated the Total Annual Burden associated with the reporting rules to be 1,040 hours, and the Total Annual Costs to be \$41,600. These figures also significantly underestimate the burden to service providers, which could spend from 5,000 to 54,000 hours per year on outage reporting at a cost of between \$300,000 and \$5 million.”¹⁹
- AT&T has stated that “it spends on a minimum an estimated 12 hours per NORS reportable outage” which “is easily more than double the Commission’s estimate that the paperwork burden ‘would be significantly less than 5 hours.’”²⁰

These burdens should not be extended as proposed, especially without evidence of a direct public benefit that would flow from the proposed extension of mandatory outage reporting.²¹

¹⁸ See AT&T, Inc. Comments, ET Docket No. 04-35 at 3-5 (Aug. 2, 2010).

¹⁹ ATIS Comments, ET Docket No. 04-35 at 7-8, n.5 (Aug. 2, 2010). In the *NPRM*, the Commission again grossly underestimates the burden associated with the existing and proposed outage reporting requirements. See *NPRM*, Initial Regulatory Flexibility Analysis at ¶ 42.

²⁰ AT&T, Inc. Comments, ET Docket No. 04-35 at 4 (Aug. 2, 2010).

²¹ If the Commission nevertheless moves forward with the proposed mandatory outage reporting requirements for interconnected VoIP service and Broadband Providers, it could minimize the burdens by requiring that reports be filed (i) only after the outage has been corrected (ii) unless the outage relates to vandalism, terrorism, or special facilities (such as airports or 911 facilities). See ATIS Comments, PS Docket No. 10-270 at 1, 6 (Jan. 13, 2011). At a minimum, the threshold for determining whether an outage report is necessary based on the duration of the outage should be increased from 30 minutes to two hours.

The Commission theorizes that the proposed outage reporting will lead to benefits because its current network outage reporting obligations have led to significant improvements in network reliability.²² There is no evidence, however, demonstrating that these improvements were due to outage reporting requirements and would not have been made *but for* the outage reports.²³ T-Mobile questions whether such a correlation can be made given the extensive voluntary actions taken by the industry and standards bodies to develop and implement best practices designed to prevent outages and rapidly restore service in the event of an outage.

Moreover, the argument that mandatory outage rules are necessary to ensure that the industry can monitor emerging threats and problems is less than compelling²⁴ because the industry already voluntarily shares outage information through membership in the NRSC and similar bodies.²⁵ The development of industry best practices, which the Commission acknowledges led to a reduction in communications outages,²⁶ is driven by voluntary carrier efforts rather than FCC outage reports.

²² See *NPRM* at ¶¶ 8-11.

²³ Accord AT&T, Inc. Comments, ET Docket No. 04-35 at 4-5 (Aug. 2, 2010). The Commission cites to the NRSC 2008-2009 Biennial Report for the proposition that outage reports have been recognized by industry and others as valuable. See *NPRM* at ¶ 8. The NRSC Biennial Report, however, does not conclude that mandatory outage reports led to any network improvements or that the data contained within such reports would not have been available absent a mandatory reporting requirement.

²⁴ See *NPRM* at ¶ 8.

²⁵ ATIS Ex Parte at 3.

²⁶ *NPRM* at ¶ 8.

Any potential benefit of the proposed outage reporting obligations would be minimal at best because IP networks bring more stability and reliability than traditional networks.²⁷ Further, only a very small percentage of perceived “outages” on these networks are due to failures within the control of providers that would be covered by the reporting obligations.²⁸ T-Mobile, for example, provides its customers an on-ramp and off-ramp to the Internet but does not control whether certain applications will work once customers reach the Internet. Outages associated with the inability to utilize such applications likely comprise the largest number of such perceived “outages,”²⁹ yet providers of such applications are not subject to any reporting obligations due to lack of application availability. Absent concrete evidence that the proposed

²⁷ See, e.g., T-Mobile Comments, PS Docket No. 11-60 at 15-17 (July 7, 2011); Linda K. Moore, U.S. Congressional Research Service, EMERGENCY COMMUNICATIONS: THE FUTURE OF 911 at 1 (RL34755, March 16, 2010) (describing the general consensus that “IP-enabled emergency communications network that supports 911 will facilitate interoperability and system resilience” and describing Congressional action supporting use of IP-enabled 911 systems); Cisco Systems, Inc., *IP-Based Networks Support Defense Transformation*, at 4-5 (2005) (noting that resilience and survivability are key features of IP networks, which can route around network interruptions using any available physical medium (fiber, wireless, satellite, etc.)), available at www.cisco.com/web/strategy/docs/gov/space_IPBasedNetworks_v3.pdf; Cisco Systems, Inc., *Cisco Cable IP Solutions for High-Availability Networks*, at 24 (2003) (performing an analysis of IP-based VoIP on cable systems and concluding that “technological improvements at the component, system, transport, network, and routing level are enabling IP networks to exceed traditional circuit-switched networks in terms of resiliency and availability.”), available at http://www.cisco.com/en/US/products/hw/cable/ps2209/products_white_paper09186a00801af388.shtml; Anne Smith, et. al, “An Overview of Cisco IP Communications,” chapter in CISCO CALLMANAGER FUNDAMENTALS (2nd ed. 2005) (describing how packet-based communications provide superior reliability through the use of clustering rather than the traditional analog strategy of supplying redundant network equipment), available at <http://www.ciscopress.com/articles/article.asp?p=426635>.

²⁸ See Verizon and Verizon Wireless Comments, ET Docket No. 04-35 at 8 (Aug. 2, 2010) (noting that “less than 3% of customer reports to Verizon’s FiOS support centers that customers could not connect to the Internet were due to outages on Verizon’s broadband network”).

²⁹ *Id.*

outage reporting would result in tangible benefits not otherwise achievable through existing, voluntary efforts, the Commission should refrain from adopting such requirements.

II. ANY NEW OUTAGE REPORTING SHOULD BE VOLUNTARY

As stated above, outage reports are unnecessary given the extensive sharing of information by the industry on a voluntary basis for the purpose of developing best practices and standards. If the Commission nevertheless desires outage data with regard to interconnected VoIP and Broadband ISPs, it should establish a voluntary reporting program using the same collaborative process between the FCC and industry that underlies the DIRS and DIRS-Lite voluntary reporting systems. Covered providers, however, should be encouraged to provide outage information *after* the outage itself has been resolved. The primary focus should be on restoration, not reporting.

Moreover, voluntary reporting based on metrics developed by industry groups and standards bodies provides the necessary flexibility to obtain outage information in a manner best suited to new technologies. Mandatory reporting based on metrics adopted by the FCC is too rigid and based on networks and technologies as we know them today. In order to modify such a reporting regime, the Commission would have to engage in a new rulemaking. Under a voluntary regime, however, the industry can quickly modify reporting thresholds and metrics to match new and evolving technologies and network designs.

III. OUTAGE REPORTING SHOULD BE LIMITED TO ACTUAL OUTAGES

The Commission proposes to extend the existing Part 4 outage reporting requirements but proposes metrics for triggering outage reports that would effectively convert the reports into “performance” reports. Moreover, the proposed metrics are unsupported and largely unworkable. For example, the Commission proposes to require outage reports whenever there is “packet loss of one percent or more, round-trip latency of 100 ms or more, or jitter of 4 ms or

more from the source to the destination host.” Each of these proposed triggers would require an outage report even though there is no actual outage.

The *NPRM* provides no basis for the specific values proposed for the reporting triggers. For example, the *NPRM* fails to cite any support for its proposed outage reporting trigger for 100 ms latency, a trigger that is inconsistent with well established standards regarding both outages and significant service degradation. Pursuant to ITU recommendation G.114, the latency delay for an acceptable voice call should be in the 150-250 ms range and can be as high as 400 ms.³⁰ The *NPRM* also fails to provide any basis for the proposed filing trigger for 4 ms jitter, which is inconsistent with established standards which find jitter of up to 30 ms acceptable for voice and up to 50 ms for video applications.³¹

It also appears that the Commission may have the misunderstanding that Dynamic Host Configuration Protocol (“DHCP”) servers operate over pre-defined markets or geographies. For example, the agency questions whether DHCP servers could be used to estimate the number of IP addresses/users impacted by an outage.³² DHCP servers do not assign IP addresses, however, on a market-specific basis. A DHCP server in New York City, for example, may assign IP addresses for users in Albuquerque, New Mexico.

This confusion over the relevant metrics that should be used for outage reporting also underscores the importance of relying on standards bodies to develop the appropriate metrics. Under the metrics proposed in the *NPRM*, networks would be in a perpetual “outage” state even though consumers retain the ability to communicate and utilize their VoIP and Broadband

³⁰ ITU-T Rec. G.114 (2003); *accord* “Unified Communications: Network Fabric, Connecting People Any Time, Any Where,” Cisco White Paper, 2 (2009) (“Cisco Paper”).

³¹ See Cisco Paper at 2.

³² See *NPRM* at ¶¶ 28, 42.

services. Thus, the metrics referenced in the *NPRM* should not be used as a basis for mandatory outage reporting.³³

Moreover, any new outage reporting regime – whether mandatory or voluntary – should be limited to actual outages within the control of the covered provider. Broadband ISPs, for example, should not be expected to report outages related to Customer Premises Equipment (“CPE”) failures or other issues that are beyond the provider’s control. The reports also should be filed only where there has been a failure within the provider’s control that results in the total inability to utilize the network, not where there has been a degradation of service.

IV. THE COMMISSION SHOULD CONTINUE TO TREAT OUTAGE REPORTING INFORMATION AS CONFIDENTIAL

The Commission has previously concluded that outage reports must be treated as confidential and that the national defense and public safety would be “seriously undermined” if the reports were publicly available.³⁴ This conclusion remains valid and the Commission should continue to treat all outage reports as confidential. T-Mobile recognizes that the Department of Homeland Security (“DHS”) may desire continued access to certain outage data held by the Commission and has no objection to DHS obtaining such data on a confidential basis.

³³ At a minimum, the Commission should not adopt outage reporting metrics that would effectively require covered providers to redesign their networks in order to obtain the desired information. To monitor for the types of “outages” the Commission wants reported, covered providers may have to install certain “alarms” in their systems. The design and deployment of these alarms would cost T-Mobile alone tens of millions of dollars. Such a re-engineering of systems and/or requiring the installation of new data collection/processing mechanisms represent burdensome network modifications that should not be required by an outage reporting regime. *See New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, Order Granting Partial Stay, 19 FCC Rcd 25039, 25043 (2004) (noting that “[c]ommunications providers are not required to reconfigure their networks or to add any monitoring equipment that might alert them more quickly to the onset of an outage . . .”).

³⁴ *See New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830, 16834 (2004).

Additional disclosure of outage information, even on a confidential basis, should be extremely limited.³⁵

CONCLUSION

Network reliability, resiliency, and continuity are important issues. As discussed above, however, mandatory outage reporting is unnecessary, inconsistent with the July 2011 Executive Order, and diverts resources that could be better used to resolve outages. If the Commission nevertheless determines that outage reporting information should be provided, it should establish a voluntary process for providing this information that allows providers to resolve the outage before submitting any outage information. Finally, to the extent the Commission receives outage information, it should be treated as confidential.

Respectfully submitted,

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³⁵ *Accord* T-Mobile Comments, ET Docket 04-35 at 1-6 (Mar. 19, 2010).